



MEETING THE PROJECT MANAGEMENT CHALLENGE

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Abstract

"Decision And Uncertainty Management For Human And Human/Agent Teams"

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This presentation covers the basics of decision management and how it is being applied to human and human-agent teams.

Managers are beginning to realize the potential for significant returns when a disciplined process is applied to critical decision problems. Traditional decision support methods--e.g. formal optimization, voting, and other structured methods are not well suited for teams, especially when perspectives vary, members are distributed in time and location, and information is incomplete, uncertain, and evolving.

In the late 1990s tools were developed, based on Bayesian methods, to help support distributed teams make decisions when their information is uncertain, incomplete, conflicting and evolving. These tools have been refined and applied in industry to support business and technical project teams designing products, making portfolio decisions and selecting vendors. Results show significant increase decision confidence, improved efficiency, better transparency and objectivity, and rationale capture. The potential for the application of these decision management tools in NASA will be introduced.

Research was recently begun (funded by NASA AMES) to extend decision management techniques to operational human-agent teams. In this situation, teams of humans and software agents are working in real time to manage a system. The software agents may be part of satellites, rovers or other devices far removed in time and location from the human team. These agents are gathering information and making autonomously decisions on their own. However, as change occurs, and uncertainty increases or as future scenarios need to be forecast, an agent may need the involvement of other agents and human partners as part of a decision making team. Certain key decisions made by this team may determine the success of a program or the survival of an agent or astronaut. The potential for supporting this type of team activity will also be covered in the presentation.



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